DISCUSSION OF THE CLAIMS

Support for new Claim 14 is found in original Claim 1.

Support for new Claim 15 is found in original Claim 1.

No new matter has been added.

REMARKS/ARGUMENTS

The rejection of Claims 3, 5, 7, 8 and 13 under 35 U.S.C. 103(a) as being unpatentable over Guelton et al. (US 6,358,338) in view of Kim et al.(WO 93/13233), and further in view of Ferguson ("Design for Deformation Processes," Vol. 20, ASM Handbooks Online) is traversed.

Guelton discloses a strip of an iron-carbon-manganese alloy. Guelton further discloses a sheet having C of 0.001 to 1.6%, Mn of 6 to 30% and Si of 2.5% or less (see Guelton, Claim 1). However, Guelton does not disclose a process comprising heating a semifinished product of an alloy of Claim 3 to a temperature of between 1100 and 1300°C; rolling said semifinished product with an end-of-rolling temperature of 890°C or higher; and coiling said product at a temperature below 580°C as in Claim 3. To the contrary, Applicants disclose that a hot-rolled sheet obtained by the process according to Claim 3 has a surface fraction of precipitated carbides of less than 1.5 % as in new Claim 15. Guelton does not disclose such a hot-rolled sheet.

Kim does not cure the deficiencies of Guelton. Kim discloses a steel having C of less than 1.5%, Mn of 15 to 35% and Al of 0.1 to 6.0%. As to the Al content, Kim discloses that (see Kim, page 8, lines 12-26, emphasis added):

> The aluminum (Al) like the carbon heightens the stacking fault energy to stabilize the austenite phase, and does not form ε-martensites even under a severe deformation such as cold rolling, but contributes to forming twins. Thus the aluminum is an important element for improving the cold workability and press formability. However, if its content is less than 0.1%, ε-martensites are formed to deteriorate the elongation, although its strengths are reinforced, with the result that cold workability and press formability are deteriorated. Meanwhile, if its content exceeds 6.0%, the stacking fault energy is too much augmented, so that a slip deformation occurs due to a perfect dislocation. Therefore, the content of aluminum should be desirably 0.1-6.0%.

As disclosed above, Kim teaches away from having Al of less than 0.1%. To the contrary, an alloy of Claim 3 comprises Al of 0.05% or less. Thus, in light of the teachings of Kim, one of ordinary skill in the art would not combine Guelton and Kim to obtain a sheet having Al of 0.05% or less. Furthermore, Kim fails to disclose a hot rolled sheet having a surface fraction of precipitated carbides of less than 1.5 % as in new Claim 15.

Thus, in light of the teachings of Guelton and Kim, one of ordinary skill in the art would not have foreseen a process as in Claim 3 and the dependent claims therefrom.

Ferguson does not cure the deficiencies of Guelton because Ferguson does not disclose a process comprising heating a semifinished product of an alloy of Claim 3 to a temperature of between 1100 and 1300°C; rolling said semifinished product with an end-of-rolling temperature of 890°C or higher; and coiling said product at a temperature below 580°C as in Claim 3.

Withdrawal of the rejection is respectfully requested.

The rejection of Claim 4 under 35 U.S.C. 103(a) as being unpatentable over Guelton et al. in view of Kim et al. and further in view of Ferguson, as applied to Claim 3 above, and optionally further in view of Andersson et al. (US 4,646,440) is traversed.

Andersson discloses a continuous casting apparatus. However, Andersson does not disclose a process comprising heating a semifinished product of an alloy of Claim 3 to a temperature of between 1100 and 1300°C; rolling said semifinished product with an end-of-rolling temperature of 890°C or higher; and coiling said product at a temperature below 580°C as in Claim 3. Thus, in light of the teachings of Guelton, Kim, Ferguson, and Andersson, one of ordinary skill in the art would not have foreseen a process of a process for manufacturing a hot-rolled sheet particularly having Al of 0.05% or less as in Claim 3 and the dependent claims therefrom.

Withdrawal of the rejection is respectfully requested.

The rejection of Claims 3, 5, 7, 8 and 13 under 35 U.S.C. 103(a) as being unpatentable over Guelton et al. (US 6,358,338) in view of Hoffman et al (US 2003/0145911, , WO 02/101109 A1) and further in view of Ferguson ("Design fro Deformation Processes," Vol. 20, ASM Handbooks Online) is traversed.

Hoffman discloses a steel strip having Si of above 2.5 weight-percent. As to the Si content, Hoffman discloses that (see Hoffman, US'911, paragrah [0021]):

> **[0021]** Due to their Si contents, which are restricted to above 2.50 weight-percent, preferably above 2.70 weight-percent, steel strips and steel sheets according to the present invention have improved cold formability in comparison to those light steel strips or sheets which have lower Si contents. The high content of Si is expressed in more uniform yield point and tensile strength values and in higher fracture elongation and uniform elongation values. In addition, Si in steels according to the present invention leads to higher r and n values and to isotropic implementation of the mechanical properties. The upper limit of the sum of the contents of Al and Si is 12%, since a sum of the Al and Si contents exceeding this limit would produce the danger of embrittlement.

As disclosed above, Hoffman strictly restricts the Si content to above 2.5 weight-percent and thus teaches away from Si of 2.5 weight-percent or less. To the contrary, Guelton discloses Si

of 2.5% or less. Thus, in light of teachings of Hoffman, there would be no motivation for one of ordinary skill in the art to combine Guelton and Hoffman.

Furthermore, Hoffman discloses a process of producing a high Al content alloy having Al of 1 to 10%. To the contrary, Claim 3 discloses a process of producing a low Al content alloy having Al of 0.05% or less. Thus, in light of the teachings of Hoffman, one of ordinary skill in the art would not combine Guelton and Hoffman to obtain a low Al content alloy having Al of 0.05% or less as in Claim 3 and the dependent claims therefrom.

Withdrawal of the rejection is respectfully requested.

The rejection of Claim 4 under 35 U.S.C. 103(a) as being unpatentable over Guelton et al. in view of Hoffman and further in view of Ferguson and optionally further in view of Andersson et al. (US 4,648,440) is traversed.

As described above, Andersson discloses a continuous casting apparatus. Andersson does not disclose a process comprising heating a semifinished product of an alloy of Claim 3 to a temperature of between 1100 and 1300°C; rolling said semifinished product with an end-of-rolling temperature of 890°C or higher; and coiling said sheet at a temperature below 580°C as in Claim 3. Thus, in light of the teachings of Guelton, Hoffman, Ferguson, and Andersson, one of ordinary skill in the art would not have foreseen a process of a process for manufacturing a hot-rolled sheet as in Claim 3 and the dependent claims therefrom.

Withdrawal of the rejection is respectfully requested.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal allowance. An early and favorable action is therefore respectfully requested.

Respectfully submitted,

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